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			ART UNIT	PAPER NUMBER
			1794	
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			11/30/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/581,200	<b>Applicant(s)</b> TAKASHIMA ET AL.	
	<b>Examiner</b> VIREN THAKUR	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-18 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :2/10/09; 9/18/08; 1/31/08; 12/14/07; 6/1/06.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 12-19 and 22-25 in the reply filed on July 20, 2009 is acknowledged.

Claims 1-11 and 20-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 20, 2009.

### ***Claim Objections***

2. Claims 17-19 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to the other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**4. Claims 12, 14, and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi et al. (JP 2004-222719).**

Regarding claims 12 and 22, Takahashi teaches bringing green tea extract into contact with a solution comprising an organic solvent and water (paragraph 0010 and 0018) and treating with activated clay or acid clay, and activated carbon (paragraph 0022 to 0027). Regarding the ratio of the organic solvent to water, it is noted that Takahashi teaches employing a 95% ethanol solution and then adding activated carbon and acid earth (i.e. acid clay) (paragraph 0038). Therefore, a 95% ethanol solution (i.e. 95% ethanol to 5% water) falls within the claimed range of 91/9 to 97/3 ratio of ethanol to water.

Regarding claim 14, Takahashi et al. teaches dissolving a powdered catechin composition (i.e. green tea extract) in the 95% ethanol solution and then contacting with activated carbon and acid clay (paragraph 0008 and 0038).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**7. Claim 12-13,15-16, 22, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al. (JP 2000-166466) in view of Hall, Jr. et al. (US 4229612), Katz (US 4324840), Klima et al. (US 4976979) and in further view of Bailey et al. (US 6210679).**

Regarding claims 12 and 22, Funahashi et al. teaches obtaining a green tea (paragraph 0016) extract by extracting green tea using known extraction methods such as water (paragraphs 0028, 0029 of the machine translation). After this primary extraction, Funahashi et al. teaches a second extraction step which incorporates the use of an organic acid (paragraph 0028) and additionally uses a mixture comprising water and an organic solvent such as ethanol (paragraph 0031). Additionally, the extraction after treatment with the solvent such as ethanol involves treatment with an adsorbent, such as magnesium silicate, calcium silicate or aluminum silicate. It is noted that these are absorbents which are used to remove the caffeine (paragraph 0033). It is noted that magnesium silicate is a known clay adsorbent, as evidenced by Hall, Jr. et al. (column 3, lines 22-28), which contain general chemical components, MgO and SiO<sub>2</sub>

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which thus fall under applicants' definition of activated or acid clay adsorbents (see paragraph 0035 on pages 16-17 of applicant's specification).

Claim 12 differs from Funahashi in specifically reciting that the green tea extract is contacted with activated carbon and acid clay or activated clay.

Nevertheless, it is noted that Katz teaches that a combination of activated carbon and clay can both be used for the purpose of removing caffeine (column 6, lines 26-30) from an aqueous caffeine containing solution, such as tea (column 2, lines 23-26). Klima further evidences that activated clay and activated carbon can be employed as adsorbents for the purpose of removing caffeine (column 2, lines 29-32). Therefore, the art teaches that activated clay and activated carbon are conventional adsorbing materials that the art has conventionally used to lower the levels of caffeine from a tea extract. Since Funahashi et al. already teaches an activated or acid clay for the similar purpose of reducing the caffeine levels in the green tea extract, to therefore modify Funahashi et al. and employ a combination of absorption agents such as activated carbon and activated clay, which the art has already recognized can be used to reduce the levels of caffeine would have been an obvious result effective variable, routinely determinable by experimentation depending on the degree of removal of caffeine desired.

Claim 12 further differs from the combination in the particular ratio of organic solvent to water to which the green tea extract has been contacted. It is noted however, that Bailey et al. teaches employing extraction techniques for obtaining green tea extract using a 95% ethanol solution to achieve the desired caffeine free catechins from

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green tea (column 3, lines 47-56 and column 5, lines 62-64). Funahashi et al. is similar in that Funahashi et al. teaches that the extraction yield depends on the amount of the organic solvent employed (paragraph 0027). Nevertheless, it is noted that since the art already teaches employing a combination of an organic solvent and water for the purpose of facilitating treatment of the green tea extract, the particular amount of organic solvent employed would have been an obvious result effective variable, routinely determinable by experimentation, depending on the desired catechin yield of the extraction.

Regarding the particular amount of non-polymer catechins in the low-caffeine green tea extract, it is noted that the claim recites the steps for achieving a low-caffeine green tea extract having a particular amount of non-polymer catechins. Therefore, if the steps of treating with an organic solvent and water, activated carbon and acid clay or activated clay are obvious, then the particular product produced from the process would also have been an obvious result of the process.

Regarding claim 13 which recites that the pH is controlled to from 4 to 6 when the green tea is brought into contact with acid clay or activated clay, it is noted that Funahashi et al. teaches employing organic acids during the second extraction, such as malic or succinic acid (paragraph 0028). In paragraph 0023, Funahashi et al. teaches maintaining a pH of 5 after extraction, for instance. This acid is added to the extraction after the initial green tea extraction. Nevertheless, this acid would control the pH of the extract, and aids in controlling the oxidation of the green tea extract (paragraph 0030). In paragraph 0030, Funahashi et al. further teach that as the pH of the extract



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approaches neutral (i.e. pH of 7) oxidation of polyphenols in the tea occurs. Therefore, although Funahashi do not explicitly recite maintaining a pH of between 4 to 6, it is noted that it would have been an obvious result effective variable, routinely determinable by experimentation to maintain a pH of between 4-6, for the purpose of preventing oxidation of the polyphenols, especially since Funahashi et al. already teaches adding applicants' organic acids. Regarding the particular step of having this pH when the green tea is brought into contact with the clay, it is noted that since Funahashi et al. teaches controlling the pH prior to treatment with the clay, that it would have been obvious to have maintained the pH when brought into contact with the clay for the purpose of preventing the oxidation of the green tea extract, as discussed above.

Regarding claim 15, which recites that the green tea extract is brought into contact with a dispersion of activated carbon and clay in the mixture of the organic solvent and water, it is noted that the combination as applied to claim 12 already teaches that it would have been obvious to have employed a combination of adsorbents such as activated carbon and clay for the purpose of reducing the caffeine content of green tea. For instance, Klima even teaches multiple extraction components such as carbon dioxide and an adsorbent together for the purpose of removing the caffeine from tea (see abstract). Once the art recognized employing a combination, together, for the purpose of reducing the caffeine content, to thus employ a particular dispersion would have been an obvious result effective variable, routinely determinable by experimentation depending on the particular interaction desired between the adsorbents and the green tea extract.

Regarding claim 16, which recites that the green tea extract is brought into contact with the clay and then into contact with the activated carbon, it is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Claim 24 recites that the ratio of the organic acid to the catechins ranges from 0.02 to 0.2.

As discussed above with respect to claim 13, Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins. Nevertheless, this would also have been a function of the amount of catechins present. To therefore employ a particular amount of the organic acid would thus have been an obvious result effective variable routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

Claim 25 recites that after bringing the green tea extract into contact with the dispersion at a temperature of from 10 to 30°C, that the temperature is raised to from 40 to 60°C.

The claim differs from the combination as applied to claim 15 in this regard. It is noted however, that Funahashi et al. teach contacting the green tea extract with the ethanol solution at room temperature (paragraph 0037) (i.e. about 20-25°C). Nevertheless, Katz teaches that extraction and interaction of the tea and the absorbent can vary depending on the particular type of adsorbent employed as well as the particular processing equipment and conditions employed. Katz further teaches that the rate of extraction can be affected by the particular temperature at which the contact between the tea and the absorbent (column 4, lines 8-24). It is noted however, that Katz does teach temperatures between 25°C and 100°C for the purpose of achieving the desired extraction. Katz also provides examples maintaining an extraction at 43°C (example 3 on column 5) for the purpose of achieving the desired extraction. It is further noted that Bailey et al. teaches on column 7, lines 19-21, that heating facilitates dissolution of the catechin extract in the presence of a solvent, using temperatures such as 60°C, which this falls within the claim limitation for heating. It is noted that applicants also appear to use the increase in heat for facilitating dissolution of the catechin extract as well as for facilitating extraction when in the presence of adsorbents. Nevertheless, these concepts are conventional in the art, as evidenced by Katz and Bailey et al., for the purpose of facilitating extraction of a green tea extract. Therefore, to modify the combination and employ a raised temperature would thus have been an obvious result effective variable routinely determinable by experimentation, for the purpose of achieving the desired extraction of the caffeine components from the tea extract.

**8. Claims 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 12-13,15-16,22,24-25, above, and in further view of Tsai et al. (US 4935256).**

Claim 14 recites that the green tea extract is dissolved in the mixture of organic solvent and water and is then brought into contact with activated carbon and the clay. It is noted that Funahashi et al. appears silent in this regard. Nevertheless, Funahashi et al. teaches sequentially extracting green tea using a first extraction technique and then a subsequent extraction using an aqueous ethanol solution. Therefore, Funahashi et al. does not explicitly teach dissolving the first extracted green tea extract into the second extraction liquid but nonetheless, blends together a first extract with a second treatment solution. It is noted however, that whether one chose to first dry the green tea extract into a powdered form and then combine into the aqueous organic solvent solution would nonetheless have been an obvious matter of choice and/or design. In any case, it is noted that Tsai et al. teaches that it was a conventional concept to first employ a dry green tea extract which was subsequently dissolved in an organic solvent, for the purpose of further extracting the green tea (column 4, lines 39-43), and Bailey further teaches the concept of dissolving the catechin extract in an organic solvent (column 7, lines 18-24)

Claim 25 can also be construed to read that treatment with the dispersion occurs at between 10-30°C and after this treatment the temperature is raised to 40-60°C. Funahashi teaches a room temperature treatment in the presence of the solvent and the

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adsorbent, as discussed in paragraph 0037. Claim 25 would thus differ from Funahashi et al. in raising the temperature to 40-60°C.

Nevertheless, it is noted that the concept of raising the temperature when extracting in the presence of an organic solvent such as an alcohol, has been conventionally employed in the art, for the purpose of evaporating off the solvent, thus leaving only the desired product. For instance, Tsai teaches that after contact with organic solvents, the mixture is heated to 40°C for the purpose of evaporating off the solvent (Column 4, line 51-53). It is noted that Bailey et al. also teaches the concept of evaporating off the solvent (column 5, lines 28-30). Therefore, to modify Funahashi et al. and raise the temperature to 40°C would thus have been obvious to one having ordinary skill in the art, for the purpose of evaporating the solvent after treatment.

9.

**10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 12-14,15-16, 22, 24-25, above, and in further view of Nakamura et al. (JP 06-142405).**

Claim 23 recites that the clay is used in an amount such that the ratio of the clay to the non-polymer catechins ranges from 0.9 to 5. The claim differs from the combination in this regard. It is noted however, that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components

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that would have been desired, as well as the particular amount of green tea extract that is being treated. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea extract and the clay, for removal of these caffeine components. Also, based on the amount of green tea extract present, it would have been obvious to one having ordinary skill in the art that a particular amount the adsorbent such as clay would have been required. Therefore, based on the particular desired effectiveness of the clay employed as well as the particular amount of green tea extract present, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

Regarding the limitation of acid clay, it is noted that the combination as applied to claim 12 already teaches employing a substance such as activated clay but the claim differs in reciting employing acid clay.

Nakamura et al., however, teaches that both activated clay and acid clay can be employed as the adsorbent for the purpose of reducing the caffeine content of green tea (paragraph 0004 - see "green tea" and "acid earth"). Since both acid clay and activated clay have been employed for reducing the caffeine content of green tea, to thus modify the previous combination and employ acid clay would have been an obvious substitution of one conventional caffeine absorbent for another conventional caffeine adsorbent.

**11. Claim 13 is rejected 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (JP 2004-222719) in view of Funahashi et al. (JP 2000-166466).**

Takahashi et al. is applied for the reasons given above under 35 U.S.C. 102(a).

Regarding claim 13, which recites wherein a pH is controlled to from 4-6 when the green tea is brought into contact with the acid clay or activated clay, it is noted that Takahashi et al. teaches adding organic acids (paragraph 0014) but appears silent as to the particular pH when in contact with the activated clay.

It is noted that Funahashi et al. teaches employing organic acids during the second extraction, such as malic or succinic acid (paragraph 0028). In paragraph 0023, Funahashi et al. teaches maintaining a pH of 5 after extraction, for instance. This acid is added to the extraction after the initial green tea extraction. Nevertheless, this acid would control the pH of the extract, and aids in controlling the oxidation of the green tea extract (paragraph 0030). In paragraph 0030, Funahashi et al. further teach that as the pH of the extract approaches neutral (i.e. pH of 7) oxidation of polyphenols in the tea occurs. Therefore, although Funahashi do not explicitly recite maintaining a pH of between 4 to 6, it is noted that it Funahashi teaches keeping the pH lower than 7, for the purpose of preventing oxidation of the polyphenols, especially since Funahashi et al. already teaches adding applicants' organic acids. Regarding the particular step of having this pH when the green tea is brought into contact with the clay, it is noted that since Funahashi et al. teaches controlling the pH prior to treatment with the clay, that it would have been obvious to have maintained the pH when brought into contact with the

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clay for the purpose of preventing the oxidation of the green tea extract, as discussed above. It is noted that Takahashi et al. also teaches employing a nonoxidative atmosphere (paragraph 0014), thus teaching preventing oxidation of the green tea extract. Therefore, since Takahashi et al. already teaches using organic acids, to thus modify Takahashi et al. employ an organic acid so as to maintain a particular pH that prevents oxidation would thus have been an obvious result effective variable, routinely determinable by experimentation for the purpose of ensuring that the pH does not become neutral, which Funahashi et al. teaches would result in undesirable oxidation of the green tea extract.

**12. Claims 15-16, 23, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (JP 2004-222719).**

Takahashi et al. is applied for the reasons given above under 35 U.S.C. 102(a). Regarding claim 15 which recites that the green tea extract is brought into contact with a dispersion of activated carbon and acid or activated clay in the mixture of the organic solvent at water, it is noted that Takahashi does not explicitly teach a dispersion of acid clay and activated carbon. Nevertheless, Takahashi teaches adding activated and acid clay into the ethanol/water solution and then continuing stirring of the entire mixture of the adsorbents, solvent and catechin composition (paragraph 0038). It is noted that the claim does not specify at what point is a dispersion of activated carbon and acid or activated clay present. The claim also does not specify how the contact occurs



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between the “dispersion” of activated carbon and acid or activated clay. In light of this, it is noted that by mixing acid clay and activated carbon into the ethanol/water solvent comprising the catechin composition, that at a certain point there would have been a reasonable expectation of a dispersion of the activated carbon and acid clay within the solvent which would have contacted the green tea extract, especially since Takahashi et al. teaches that after the addition of the activated carbon and acid clay, stirring is continued for 10 minutes (paragraph 0038).

In any case, once the art recognized employing a combination, together, for the purpose of reducing the caffeine content, to thus employ a particular dispersion would have been an obvious result effective variable, routinely determinable by experimentation depending on the particular interaction desired between the absorbents and the green tea extract.

Regarding claim 16, which recites contacting the green tea extract with acid or activated clay and then activated carbon, it is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Claim 23 recites that the clay is used in an amount such that the ratio of the clay to the non-polymer catechins ranges from 0.9 to 5. The claim differs from Takahashi et al. in this regard.

It is noted however, that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components that would have been desired. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea extract and the clay, for removal of these caffeine components. Therefore, based on the particular desired effectiveness of the clay employed, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

Claim 25 recites that after bringing the green tea extract into contact with the dispersion at a temperature of from 10 to 30°C, that the temperature is raised to from 40 to 60°C. With respect to this increase in temperature, it is noted that throughout the treatment of the green tea extract, Takahashi teaches an initial room temperature treatment (i.e. 20-25°C has been known to be standard room temperature) in the solvent and subsequent addition of adsorbents such as activated carbon and acid clay at room temperature stirring and subsequent heating at 40°C to distill off the ethanol (paragraph 0038). It is noted that the claim does not indicate at what point is the temperature raised to from 40 to 60°C from 10 to 30°C. By reciting “after bringing the green tea extract into contact with said dispersion... the temperature is raised to from

40 to 60°C," the claim reads on treatment with the solvent and the adsorbent dispersion at between 10-30°C and subsequent raising of the temperature to 40-60°C.

**13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 15-16, 23, 25 above in paragraph 12, and in further view of Funahashi et al. (JP 2000-166466).**

Claim 24 recites that the ratio of the organic acid to the catechins ranges from 0.02 to 0.2 and differs from Takahashi et al. in this regard.

As discussed above in paragraph 10 with respect to claim 13, Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins. Nevertheless, this would also have been a function of the amount of catechins present. To therefore employ a particular amount of the organic acid would thus have been an obvious result effective variable routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

**14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 15-16, 23, 25 above in paragraph 12, and in further**

**view of Funahashi et al. (JP 2000-166466), Katz (US 4324840) and Bailey et al. (US 6210679).**

Regarding claim 25, the claim has also been construed to mean that the treatment with the dispersion also occurs at from 40-60°C. In this case, the claim differs from the combination as applied to claim 15 in this regard.

It is noted however, that Funahashi et al. teach contacting the green tea extract with the ethanol solution at room temperature (paragraph 0037) (i.e. about 20-25°C). Nevertheless, Katz teaches that extraction and interaction of the tea and the absorbent can vary depending on the particular type of adsorbent employed as well as the particular processing equipment and conditions employed. Katz further teaches that the rate of extraction can be affected by the particular temperature at which the contact between the tea and the absorbent (column 4, lines 8-24). It is noted however, that Katz does teach temperatures between 25°C and 100°C for the purpose of achieving the desired extraction. Katz also provides examples maintaining an extraction at 43°C (example 3 on column 5) for the purpose of achieving the desired extraction. It is further noted that Bailey et al. teaches on column 7, lines 19-21, that heating facilitates dissolution of the catechin extract in the presence of a solvent, using temperatures such as 60°C, which this falls within the claim limitation for heating. It is noted that applicants also appear to use the increase in heat for facilitating dissolution of the catechin extract as well as for facilitating extraction when in the presence of adsorbents. Nevertheless, these concepts are conventional in the art, as evidenced by Katz and Bailey et al., for the purpose of facilitating extraction of a green tea extract. Therefore, to modify the

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combination as applied to claim 15 above in paragraph 11 and employ a raised temperature would thus have been an obvious result effective variable routinely determinable by experimentation, for the purpose of achieving the desired extraction of the caffeine components from the tea extract.

15.

### ***Double Patenting***

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**17. Claims 12,15,16,17,22, 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7,10 of copending Application No. 11/511321.**

Regarding claims 12 and 22, copending claims 1 and 7 teach treating green tea extract with an organic solvent and water present at a ratio of 91/9 to 97/3 and then contacting with activated carbon and/or acid clay or active clay.

Regarding claim 15, copending claims 1 and 7 teach that both active carbon and clay can be employed. Although the copending claims do not specifically recite that the combination is a dispersion, the copending claims do nonetheless, teach employing a combination of active carbon and clay. Therefore, whether one chose to employ a dispersion would have been an obvious matter of choice and/or design routinely determinable by experimentation.

Regarding claim 16 which recites bringing the tea into contact with clay and then with the activated carbon, it is noted that copending claim 2 teaches first contacting the green tea extract with active carbon or the acid or active clay and subsequently removing one of the active carbon or active or acid clay. It is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Regarding claim 17, copending claim 10 teaches ethanol as the organic solvent.

Regarding claim 23, it is noted that the copending claims are silent as to the particular ratio of clay to non-polymer catechins. Nevertheless, it is noted that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components that would have been desired. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea extract and the clay, for removal of these caffeine components. Therefore, based on the particular desired effectiveness of the clay employed, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

This is a provisional obviousness-type double patenting rejection.

**18. Claims 13 and 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7,10 of copending Application No. 11/511321 as applied above in paragraph 17 and in further view of Funahashi et al. (US 2000-166466).**

Claim 13 differs from the copending claims in specifically reciting controlling the pH when the green tea extract is brought into contact with the acid or active clay.

It is noted however, that Funahashi et al. teaches maintaining a pH below neutral (i.e. a pH of 7) through the use of organic acids for the purpose of preventing oxidation of the green tea extract (paragraph 0030).

To therefore modify the copending claims and employ an organic acid that maintains the pH below neutral would thus have been obvious for the purpose of preventing undesired oxidation of the green tea extract.

Claim 24 recites that the organic acid is used in a weight ratio of 0.02 to 0.2 organic acid to non-polymer catechins. Claim 24 differs from the copending claims in this particular ratio. It is noted however, that Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins. Nevertheless, this would also have been a function of the amount of catechins present. To therefore modify the combination as applied to claim 15 above in paragraph 17 and employ a particular amount of the organic acid would thus have been an obvious result effective variable routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

**19. Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7,10**



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**of copending Application No. 11/511321 as applied above in paragraph 17 and in further view of Tsai et al. (US 4935256).**

Regarding claim 14, copending claims 1 and 7 teach adding green tea extract to an organic solvent and water and then bringing into contact with adsorbents. Claim 14 differs from the copending claims in reciting dissolving the green tea extract in the mixture of organic solvent and water. Nevertheless, dissolving a solid green tea extract has been a conventional concept in the art, for the purpose of facilitating extraction of a green tea concentrate, as evidenced by Tsai on column 4, lines 39-42). To therefore modify the copending claims employ a dry extract which was subsequently dissolved in the solution would thus have been an obvious matter of choice and/or design.

**20. Claim 25 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7,10 of copending Application No. 11/511321 in view of Funahashi et al. as applied above in paragraph 18 and in further view of Tsai et al. (US 4935256), Katz (US 4324840) and Bailey et al. (US 6210679).**

Claim 25 recites after bringing green tea extract into contact with the dispersion at a temperature of 10-30°C and then raising the temperature to 40-60°C. The claim differs from the copending claims in this regard. Nevertheless, it is noted that Funahashi et al. already teaches contacting the organic solvent comprising green tea extract, with the adsorbents, at room temperature, since the extraction has been

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performed at room temperature (paragraph 0037). The claim differs from the copending claims in the particular heating step. Nevertheless, it is noted that heating to evaporate off the solvent employed during the treatment steps has been a conventional expedient for removing the solvent. For instance, Tsai teaches heating to 40°C to evaporate off the solvent (column 4, lines 51-53). To thus modify the copending claims and heat to a temperature of 40°C would have been obvious to one having ordinary skill in the art, for the purpose of evaporating off the solvent that was required during the treatment.

Additionally, it is noted that Katz teaches particular elevated temperatures for improving extraction when in the presence of adsorbents (column 4, lines 8-24). It is further noted that Bailey et al. teaches on column 7, lines 19-21, that heating facilitates dissolution of the catechin extract in the presence of a solvent, using temperatures such as 60°C, which this falls within the claim limitation for heating. It is noted that applicants also appear to use the increase in heat for facilitating dissolution of the catechin extract as well as for facilitating extraction when in the presence of adsorbents. Nevertheless, these concepts are conventional in the art, as evidenced by Katz and Bailey et al., for the purpose of facilitating extraction of a green tea extract. Therefore, to modify the combination as applied to claim 15 above in paragraph 18 and employ a raised temperature would thus have been an obvious result effective variable routinely determinable by experimentation, for the purpose of achieving the desired extraction of the caffeine components from the tea extract.

**21. Claims 12,14-16, 22, 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 and 15-17 of copending Application No. 10/532727.**

Regarding claims 12 and 22 copending claims 1-4 and 7 teach treating a solid green tea extract by contacting with an ethanol water solution and subsequently treating with activated carbon and acid clay. It is noted that copending claims 2 and 4 teach that the ethanol/water ratio is from 8/2 to 6/4 with subsequently contact with activated carbon and acid clay. Copending claim 7 further teaches adjustment of the ethanol/water solution to between 10/0 to 8/2 with subsequent adjustment to 9/1 to 5/5. It is noted that the copending claims do not recite any removal of the adsorbents during the adjustment of the ethanol/water ratio. Therefore, the copending claims read on the instant claims ratio of ethanol to water.

Regarding instant claim 14, the copending claims teach dissolving the catechin composition in the ethanol solution and then contacting with clay (see claims 2 and 4).

Regarding claim 15 which recites employing a dispersion of activated carbon and acid or activated clay, the copending claims teach employing a combination of activated carbon and acid or activated clay. Although the copending claims do not specifically recite that the combination is a dispersion, the copending claims do nonetheless, teach employing a combination of active carbon and clay. Therefore, whether one chose to employ a dispersion would have been an obvious matter of choice and/or design routinely determinable by experimentation.

Regarding claim 16, which recites bringing the tea into contact with clay and then with the activated carbon, it is noted that copending claims teach first contacting the green tea extract with active carbon and the acid or active clay. It is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Regarding claim 23, it is noted that the copending claims are silent as to the particular ratio of clay to non-polymer catechins. Nevertheless, it is noted that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components that would have been desired. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea extract and the clay, for removal of these caffeine components. Therefore, based on the particular desired effectiveness of the clay employed, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

This is a provisional obviousness-type double patenting rejection.

**22. Claims 13 and 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9, 15-17 of copending Application No. 10/532727 as applied above in paragraph 21 and in further view of Funahashi et al. (US 2000-166466).**

Claim 13 differs from the copending claims in specifically reciting controlling the pH when the green tea extract is brought into contact with the acid or active clay.

It is noted however, that Funahashi et al. teaches maintaining a pH below neutral (i.e. a pH of 7) through the use of organic acids for the purpose of preventing oxidation of the green tea extract (paragraph 0030).

To therefore modify the copending claims and employ an organic acid that maintains the pH below neutral would thus have been obvious for the purpose of preventing undesired oxidation of the green tea extract.

Claim 24 recites that the organic acid is used in a weight ratio of 0.02 to 0.2 organic acid to non-polymer catechins. Claim 24 differs from the copending claims in this particular ratio. It is noted however, that Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins. Nevertheless, this would also have been a function of the amount of catechins present. To therefore modify the combination as applied to claim 15 above in paragraph 21 and employ a particular amount of the organic acid would thus have been an obvious result effective variable

routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

This is a provisional obviousness-type double patenting rejection.

**23. Claim 25 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9,15-17 of copending Application No. 10/532727 in view of Funahashi et al. as applied above in paragraph 22 and in further view of Tsai et al. (US 4935256), Katz (US 4324840) and Bailey et al. (US 6210679).**

Claim 25 recites after bringing green tea extract into contact with the dispersion at a temperature of 10-30°C and then raising the temperature to 40-60°C. It is noted that the copending claims teach distilling off the solvent (see copending claims 7-9, 15-17). The claim differs from the copending claims in the particular temperatures employed. Nevertheless, it is noted that Funahashi et al. already teaches contacting the organic solvent comprising green tea extract, with the adsorbents, at room temperature, since the extraction has been performed at room temperature (paragraph 0037). Nevertheless, it is noted that heating to evaporate off the solvent employed during the treatment steps has been a conventional expedient for removing the solvent. For instance, Tsai teaches heating to 40°C to evaporate off the solvent (column 4, lines 51-53). To thus modify the copending claims and heat to a temperature of 40°C would have been obvious to one having ordinary skill in the art, for the purpose of evaporating off the solvent that was required during the treatment.

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Additionally, it is noted that Katz teaches particular elevated temperatures for improving extraction when in the presence of adsorbents (column 4, lines 8-24). It is further noted that Bailey et al. teaches on column 7, lines 19-21, that heating facilitates dissolution of the catechin extract in the presence of a solvent, using temperatures such as 60°C, which this falls within the claim limitation for heating. It is noted that applicants also appear to use the increase in heat for facilitating dissolution of the catechin extract as well as for facilitating extraction when in the presence of adsorbents. Nevertheless, these concepts are conventional in the art, as evidenced by Katz and Bailey et al., for the purpose of facilitating extraction of a green tea extract. Therefore, to modify the combination as applied to claim 15 above in paragraph 18 and employ a raised temperature would thus have been an obvious result effective variable routinely determinable by experimentation, for the purpose of achieving the desired extraction of the caffeine components from the tea extract.

This is a provisional obviousness-type double patenting rejection.

**24. Claim 12 15,16, 22 and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-9 and 20 of copending Application No. 11434069.**

Regarding claims 12 and 22, copending claims 7-9 and 20 teach treating green tea extract with an ethanol/water solvent present at a ratio of up to 97/3 (copending claims 8 and 20), and also contacting the green tea extract with activated carbon and acid or activated clay.

Regarding claim 15 which recites employing a dispersion of activated carbon and acid or activated clay, the copending claims teach employing a combination of activated carbon and acid or activated clay. Although the copending claims do not specifically recite that the combination is a dispersion, the copending claims do nonetheless, teach employing a combination of active carbon and clay. Therefore, whether one chose to employ a dispersion would have been an obvious matter of choice and/or design routinely determinable by experimentation.

Regarding claim 16, which recites bringing the tea into contact with clay and then with the activated carbon, it is noted that copending claims teach first contacting the green tea extract with active carbon and the acid or active clay. It is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Regarding claim 23, it is noted that the copending claims are silent as to the particular ratio of clay to non-polymer catechins. Nevertheless, it is noted that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components that would have been desired. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea



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extract and the clay, for removal of these caffeine components. Therefore, based on the particular desired effectiveness of the clay employed, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

This is a provisional obviousness-type double patenting rejection.

**25. Claims 13 and 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-9 and 20 of copending Application No. 11434069 as applied above in paragraph 24 and in further view of Funahashi et al. (US 2000-166466).**

Claim 13 differs from the copending claims in specifically reciting controlling the pH when the green tea extract is brought into contact with the acid or active clay.

It is noted however, that Funahashi et al. teaches maintaining a pH below neutral (i.e. a pH of 7) through the use of organic acids for the purpose of preventing oxidation of the green tea extract (paragraph 0030).

To therefore modify the copending claims and employ an organic acid that maintains the pH below neutral would thus have been obvious for the purpose of preventing undesired oxidation of the green tea extract.

Claim 24 recites that the organic acid is used in a weight ratio of 0.02 to 0.2 organic acid to non-polymer catechins. Claim 24 differs from the copending claims in

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this particular ratio. It is noted however, that Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins. Nevertheless, this would also have been a function of the amount of catechins present. To therefore modify the combination as applied to claim 15 above in paragraph 21 and employ a particular amount of the organic acid would thus have been an obvious result effective variable routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

This is a provisional obviousness-type double patenting rejection.

**26. Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-9, 20 of copending Application No. 11434069 as applied above in paragraph 24 and in further view of Tsai et al. (US 4935256).**

Regarding claim 14, copending claims 7-9 and 20 teach adding green tea extract to an organic solvent and water and then bringing into contact with adsorbents. Claim 14 differs from the copending claims in reciting dissolving the green tea extract in the mixture of organic solvent and water. Nevertheless, dissolving a solid green tea extract has been a conventional concept in the art, for the purpose of facilitating extraction of a green tea concentrate, as evidenced by Tsai on column 4, lines 39-42). To therefore

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modify the copending claims employ a dry extract which was subsequently dissolved in the solution would thus have been an obvious matter of choice and/or design.

**27. Claims 12, 13, 15, 16, 22 and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-7 of copending Application No. 12297452.**

Regarding claims 12 and 22, copending claims 1-3 and 6-7 teach contacting green tea extract with an organic solvent/water mixture at a ratio of between 90/10 and 97/3 (copending claim 1) and then contacting with activated carbon and activated or acid clay (copending claim 3).

Regarding claim 13, copending claim 6 teaches that the pH when the extract is brought into contact with the clay can be between 3 to 6, which thus encompasses the instantly claimed range.

Regarding claim 15 which recites employing a dispersion of activated carbon and acid or activated clay, the copending claims teach employing a combination of activated carbon and acid or activated clay. Although the copending claims do not specifically recite that the combination is a dispersion, the copending claims do nonetheless, teach employing a combination of active carbon and clay. Therefore, whether one chose to employ a dispersion would have been an obvious matter of choice and/or design routinely determinable by experimentation.

Regarding claim 16, which recites bringing the tea into contact with clay and then with the activated carbon, it is noted that copending claims teach first contacting the green tea extract with active carbon and the acid or active clay. It is noted that the particular order of contact/absorption using the clay and the carbon would have been a function of the particular pore sizes of each of the clay and the carbon, for instance. Once the art taught employing a combination of adsorbents, the particular order of absorption would have been an obvious result effective variable, routinely determinable by experimentation.

Regarding claim 23, it is noted that the copending claims are silent as to the particular ratio of clay to non-polymer catechins. Nevertheless, it is noted that the particular amount of clay would have been a function of porosity of the clay for absorption of the undesired components of the green tea extract as well as the desired degree of removal of these components that would have been desired. For instance, if it was desired to retain a particular amount of caffeine, it would have been obvious to have used less of the clay thus lowering the surface area contact between the green tea extract and the clay, for removal of these caffeine components. Therefore, based on the particular desired effectiveness of the clay employed, the particular ratio of the clay to the catechins present would have been an obvious result effective variable, routinely determinable by experimentation for the purpose of effectively removing the desired amounts of caffeine and other undesired components from the green tea extract.

This is a provisional obviousness-type double patenting rejection.

**28. Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3,6-7 of copending Application No. 12297452 as applied above in paragraph 27 and in further view of Tsai et al. (US 4935256).**

Regarding claim 14, copending claims 1-3, 6-7 teach adding green tea extract to an organic solvent and water and then bringing into contact with adsorbents. Claim 14 differs from the copending claims in reciting dissolving the green tea extract in the mixture of organic solvent and water. Nevertheless, dissolving a solid green tea extract has been a conventional concept in the art, for the purpose of facilitating extraction of a green tea concentrate, as evidenced by Tsai on column 4, lines 39-42). To therefore modify the copending claims employ a dry extract which was subsequently dissolved in the solution would thus have been an obvious matter of choice and/or design.

**29. Claim 24 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3,6-7 of copending Application No. 12297452 as applied above in paragraph 27 and in further view of Funahashi et al. (US 2000-166466).**

Claim 24 recites that the organic acid is used in a weight ratio of 0.02 to 0.2 organic acid to non-polymer catechins. Claim 24 differs from the copending claims in this particular ratio. It is noted however, that Funahashi et al. already teaches employing organic acids, for the purpose of controlling the oxidation and thus color of the green tea extract and copending claim 13 already teaches maintaining a pH which

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encompasses applicants' claimed range. Therefore, the particular amount of organic acid employed would nonetheless have been a function of the strength of the acid and its effectiveness at preventing oxidation and color change in the catechins.

Nevertheless, this would also have been a function of the amount of catechins present. To therefore modify the combination as applied to claim 15 above in paragraph 21 and employ a particular amount of the organic acid would thus have been an obvious result effective variable routinely determinable by experimentation for the purpose of achieving the desired control of the oxidation and color of the catechins.

This is a provisional obviousness-type double patenting rejection.

**30. Claim 25 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3,6-7 of copending Application No. 12297452 in view of Funahashi et al. as applied above in paragraph 29 and in further view of Tsai et al. (US 4935256), Katz (US 4324840) and Bailey et al. (US 6210679).**

Claim 25 recites after bringing green tea extract into contact with the dispersion at a temperature of 10-30°C and then raising the temperature to 40-60°C. The claim differs from the copending claims in this regard. Nevertheless, it is noted that Funahashi et al. already teaches contacting the organic solvent comprising green tea extract, with the adsorbents, at room temperature, since the extraction has been performed at room temperature (paragraph 0037). The claim differs from the copending claims in the particular heating step. Nevertheless, it is noted that heating to evaporate

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off the solvent employed during the treatment steps has been a conventional expedient for removing the solvent. For instance, Tsai teaches heating to 40°C to evaporate off the solvent (column 4, lines 51-53). To thus modify the copending claims and heat to a temperature of 40°C would have been obvious to one having ordinary skill in the art, for the purpose of evaporating off the solvent that was required during the treatment.

Additionally, it is noted that Katz teaches particular elevated temperatures for improving extraction when in the presence of adsorbents (column 4, lines 8-24). It is further noted that Bailey et al. teaches on column 7, lines 19-21, that heating facilitates dissolution of the catechin extract in the presence of a solvent, using temperatures such as 60°C, which this falls within the claim limitation for heating. It is noted that applicants also appear to use the increase in heat for facilitating dissolution of the catechin extract as well as for facilitating extraction when in the presence of adsorbents. Nevertheless, these concepts are conventional in the art, as evidenced by Katz and Bailey et al., for the purpose of facilitating extraction of a green tea extract. Therefore, to modify the combination as applied to claim 15 above in paragraph 18 and employ a raised temperature would thus have been an obvious result effective variable routinely determinable by experimentation, for the purpose of achieving the desired extraction of the caffeine components from the tea extract.

This is a provisional obviousness-type double patenting rejection.

***Priority***

31. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Conclusion***

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 20030083270 discloses dissolving catechins in an organic solvent using heat.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIREN THAKUR whose telephone number is (571)272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. T./  
Examiner, Art Unit 1794

/Steve Weinstein/  
Primary Examiner, Art Unit 1794